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# YOSEMITE NATURE NOTES

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VOLUME XXXII • NUMBER 6

JUNE 1953



*Yosemite Falls from near Old Village  
—Ansel Adams*

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**Tenaya Lake, Yosemite National Park,** by Ansel Adams from "Yosemite and the Sierra Nevada." Reproduction by permission of Houghton Mifflin Company. Called *Py-we-ack* or "Lake of the Shining Rocks" by the Yosemite Indians, the lake was given its present name by L. H. Bunnell of the Mariposa Battalion, in 1851, in honor of Tenaya—chief of the Yosemite.

# Yosemite Nature Notes

THE MONTHLY PUBLICATION OF

THE YOSEMITE NATURALIST DIVISION AND

THE YOSEMITE NATURAL HISTORY ASSOCIATION, INC.

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VOL. XXXII

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## INDIAN SITES STUDY ADDS TO YOSEMITE'S STORY

By Richard J. Hartesveldt, Ranger Naturalist

In July 1952 an important archeological study was undertaken in and about Yosemite National Park as a joint project of the University of California Archeological Survey and the National Park Service. This study integrated, for the first time, the knowledge of many previous reports with the field research made by the university team. Members of the team were Mr. J. A. Bennyhoff (author of the resulting report), Mr. Richard Brooks, and Mr. Leroy Fischer. Although the study was comprehensive, special attention was given to the recording of sites in the more accessible areas where the ever-increasing flow of park visitors threatens vandalism and other types of destruction and alteration. Because of the great altitudinal range of this extensive survey (1,600 feet to 10,700 feet), an attempt was made to take samples of settlement patterns in the various life zones. The locating of trade routes and other trails was also given particular attention.

Of the 348 known archeological sites in the Yosemite National Park region which have been assigned numbers, 328 are within the park boundaries; the remaining 20 are

located nearby and are closely associated with the others. The 1952 University of California team located, on foot, 291 of the total number of sites. Yosemite Valley, Tuolumne Meadows, and Dana Meadows were covered more thoroughly than any other area. Other meadows, lake shores, and creeks that penetrated the high country were covered as thoroughly as time permitted to ascertain the role they played in Indian trails and trade routes. Villages and campsites were measured and photographed; mortar holes were counted and measured at each site to determine the length of time it was used and how large the village was. All artifacts and flakes of obsidian were collected and added to the University of California permanent collection.

Climatic conditions limited the Indian occupation of Yosemite Valley to approximately eight months of the year—April through November. Because of this seasonal habitation and a small population, there were but few permanent villages, and, consequently, large refuse mounds were not formed and the midden was rather evenly distributed. Artifacts and charcoal-darkened soil were

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found only in some of the larger sites. Obsidian chips were about the only evidence remaining to indicate the approximate area of most sites. Mortar holes, at lower elevations, were valuable clues to villages and campsites. They were particularly helpful in Yosemite Valley in such places as the present public campgrounds, where they were the only indication left.

A comprehensive study of the mortar holes at 111 sites gave the survey members a vague idea of the size of the former settlements and the length of time each was occupied. Earlier researchers were told that a mortar hole was abandoned when it became about 5 inches deep. The University of California team found the depths to vary from a slight depression in the rock to 11 inches. The number of mortar holes at any one site varied from 1 to 417.

If less than six holes were present it was classified as a house site. The largest number of sites were in this group. The mortar holes were nearly all less than 3 inches deep, indicating short occupation, possibly by a single family. Small villages were represented by places having from 7 to 15 holes. The depth of the mortar holes was greater than in the previous group, with 15% being more than 5 inches deep. The two groups of sites with greater numbers of holes were classified as large villages: 14 of these had from 19 to 29 mortar holes, of which 12% were more than 5 inches deep; the 13 largest villages contained from 46 to 417 mortar holes, 16% of these being over 5 inches deep. At individual locations where rocks for mortars were limited, as many as 54% of the holes were at least 5 inches deep, indicating a longer period of use for each hole.



Anderson

Granite rock with many Indian mortar holes, near Big Meadow. Acorns were pounded into meal by pestle rocks in these holes.

It was deemed impossible to assign a unit period of time to the sites on the basis of depth of the mortar holes because of the variety of conditions involved. Certain advantageous holes may have been used over and over again for many years. Available space also determined how long a particular group of mortar holes would be used and how deep they would become. It is to be assumed, however, that the large villages were occupied for many generations.

The survey members located 176 sites by obsidian chips alone and classified them as trail or hunting camps. There were 45 large campsites where the ground was littered with obsidian chips. Indians undoubtedly revisited these places season after season. The remainder of the camps were small, their size being based on 5 to 20 chips per site, and were possibly used only for a short time.

The Indians considered several factors in choosing a camp or village location. Dryness was one of the most important of these factors. Most of the villages were located in the sunniest areas. The only rock shelters used were those that were continually dry. The selection of a dry position, in many cases, meant that it was necessary to live some distance from a river or creek and often away from rocks suitable for mortar holes. The most favored areas of habitation in this region were Yosemite Valley, Wawona, Big Meadow, Mather, Lake Eleanor, and Hetch Hetchy. The tributary hanging valleys of Yosemite Valley were also favored spots of occupation. Rocks used for mortars in these higher places were rare since they were above the oak-pine belt.

The high subalpine regions of Yosemite were favored hunting areas,

and campsites were abundant along streams and meadows. Tuolumne Meadows, Dana Meadows, and the Lyell Fork area were among those most heavily used. Many other sites were located along smaller streams, but only where open meadows were present to provide hunting.

The association of habitations with life zones showed that only 3% of the 290 sites with detailed information fell into the Upper Sonoran Zone (approximately 3,000 feet and below), 37% were in the Transition Zone (approximately 3,000 to 6,000 feet), and 60% were in the Boreal Zone (6,000 feet and above).

The Upper Sonoran Zone areas were not heavily used nor were any of the sites large. There was an abundant variety of fruits and nuts, but animal life was scarce in the warmer months. Many of the Transition Zone Indians came down to the Upper Sonoran Zone as a wintering area. Further study is necessary before satisfactory conclusions can be drawn about the use of the Upper Sonoran Zone by Indians.

The Transition Zone was the most favorable locality for settlements. Within this zone were found 96% of the large village sites, 66% of the small village sites, and 76% of the house sites. While the presence of California black oak was the principal reason for the heavy use of this zone, many other food trees and plants were available: Canyon live oak, sugar pine, ponderosa pine, California laurel, manzanitas, ninebark, chokecherry, wild currant, strawberry, thimbleberry, and gooseberry. These, along with seed plants, greens, and edible roots and bulbs, were abundant and many of them could be stored. Animal life was another factor that made the Transition Zone important. Rainbow trout, a prominent source of food, were



*Ansel Adams*

California black oaks on floor of Yosemite Valley. Their acorns were the "staff of life" of the Yosemite Indians.

not found above this zone because of their restriction by the high waterfalls.

The Boreal Zone contained the greatest percentage of sites found. However, 88% of them were merely campsites. The few villages with mortar holes were all located just above the Transition Zone, a short distance from the black oaks. The highest elevation that mortar rocks were found was near Harden Lake at 7,500 feet. It is thought that many of the campsites were associated with trade routes to the Mono Lake region.

Hunting was undoubtedly the primary reason for the rather heavy use of the Boreal Zone. Food plants were not present in quantity and fish were absent in this area. Deer, rabbits, bear, squirrels, and raccoons inhabited the higher elevations during the summer months and were important for food and furs.

The use of caves and rock shelters has played but a minor part in the aboriginal occupation of the Yosemite area. Only six were found having possible evidence of use by Indians. Obsidian flakes, late-type arrow points, fire drills, and other artifacts have been found near two rock shelters yet untouched by park visitors. One shelter had rough rock walls blocking side entrances from snow or attack. Mortar rocks are associated with some of these places. The Indian Caves along the Mirror Lake Road in Yosemite Valley are behind an old village location and were used during the cold of winter and as a retreat when under attack. Members of the Mariposa Battalion, who discovered the valley in 1851, found two old Indians hiding in caves, probably these. Midden and basketry have been found in them in the 1890's. The pictographs, once visible in the lower cave, have been



blotted out by smoke of campers' fires.

Pictographs have been recorded in only five localities in Yosemite National Park. All were painted with red pigment. Most of them are in or near Yosemite Valley. In Pate Valley is located the only large group of pictographs. Here was found a great variety of designs, some incised, that are representative of the Sierran region. All these designs occur commonly as petroglyphs on the eastern side of the Sierra Nevada, giving additional evidence of associations between the Paiutes, who lived there, and the Miwoks of the western slopes. The time of origin of the pictographs has not been determined accurately, but they are related to late or historic villages and campsites.

The Pate Valley pictograph area was probably occupied by Indians the year round. House pits, averaging 12 feet in diameter, were located here and it is believed that these floor depressions in their dwellings were for added warmth during the colder months. Similar pits have been found in Yosemite Valley and other localities. Some of them may represent sweat houses.

There is good evidence that the Miwoks and the Paiutes engaged in extensive trade across the Sierra Nevada. The Miwoks traded acorns, clamshell beads, baskets, arrows, and certain berries, for which the Paiutes returned obsidian, finished points, salt, bows, rabbitskin blankets, pinyon nuts, buffalo skins, insect pupae, and red and white paint.

The main trail across the Sierra, according to early Paiute informants, was through Bloody Canyon and Mono Pass, down the Dana Fork of the Tuolumne River to Tuolumne Meadows, and then up to Cathedral

Pass. The trail to Yosemite Valley divided here, one coming down Little Yosemite Valley, and the other passing Tenaya Lake and entering Yosemite Valley near Mirror Lake. Occasional entries were made along Yosemite Creek. Little was found to prove any great use of Indian Canyon as a route in and out of the valley.

The Miwoks also traded with people living at lower elevations to the west. From them they received the clamshell beads, digger pine nuts, and other foods. The Miwoks supplied obsidian, red paint, and certain woods and skins. The trade route to the west led up the canyon wall west of Bridalveil Fall to the South Fork of the Merced River, rather than down the Merced Gorge. The early Indian treaties with the Yosemitees included the Nutchu and Pohonichi of the upland valleys west of Yosemite, rather than the Indians of the lower Merced River area, strengthening the belief that the Merced Gorge was little used as a trail to the valley.

The survey team gave special attention to Yosemite Valley because of the possibility of vandalism and other types of destruction of sites. It was the largest geographical unit included in the study and was the most difficult to survey because of the heavy visitor population. Most of the 54 sites were located on the valley floor. A few were recorded on bordering slopes as high as 4,400 feet. Yosemite Valley has been so heavily used within historic times that even obsidian flakes have become scarce. Earlier accounts are vague on the exact locations of villages and campsites. Finding them has been made difficult or impossible by the presence of public campgrounds and construction. Only 16 of the 40 previously reported sites



Yosemite Valley Indian village diorama, in Yosemite Museum

were identified. Many of the earlier recorded villages, especially those described by Merriam, are uncertain as to location. This may be due to the fact that the land claimed by an Indian village outside of the actual living area was called by the same name as the village, which, on Merriam's map, did not pinpoint the village position. The University of California survey grouped the 41 mortar-rock sites, which were earlier listed as individual sites, into 29 groups. This figure cannot be considered as the final correct figure, however, because the survey lacked sufficient time to probe beneath the leaf-mold and pine-needle cover. No evidence of Indian habitation in late Pleistocene glacial features was found.

In addition to the 558 artifacts (mostly obsidian flakes and scrapers) found and cataloged by the sur-

vey team, several other collections were examined and included in the report. This is the first really comprehensive analysis of Yosemite artifacts. Projectile points were secured in abundance. More than 600 of them were sufficiently complete to be typed, and these proved to be extremely variable in form and size. This great variation in a comparatively small sample for such a large area has made accurate classification and dating nearly impossible. Some correlation seems evident with points found outside the area. It will remain for considerably more field work to give a full understanding of the time span represented. Many of the points found on the surface were recognized as belonging to the historic era. To establish a time sequence of older civilizations will require careful excavation by competent archeologists.



Other artifacts, found in smaller numbers, were blades, blanks, drills of obsidian and chert, mortar rocks and pestles, manos and metates (possibly recent implements with the central Miwoks), steatite dishes and pendants, and a few pipes and beads.

The early reports of numerous and varied archeological finds have been confirmed by the recent survey. Despite the fact that unauthorized collectors have removed much of the surface layer of artifacts, it will still be possible to collect enough points

to identify late-culture Indian sites. The evidence at hand now can be greatly augmented in the future by carefully excavating known sites to better determine the significance of artifacts already acquired, and by recording new locations, especially in the remoter areas at high elevations. Eventually, the entire story of aboriginal habitation in the Yosemite area will be built upon the knowledge derived from thorough archeological studies, such as that made by the University of California survey team.

## WILDFLOWER GARDEN NURSERY

**By Karen Sorensen, Yosemite Field School, 1952**

Just before noon on July 11, 1952, a young enrollee in the Yosemite Junior Nature School and I were walking through the wildflower garden in back of the Yosemite Museum identifying trees and shrubs. It was the last day of the school and my small friend was eager to complete his list of questions.

A short distance off the path was a shrub which needed to be examined at closer range. While we were carefully picking our way through the wildflowers we suddenly saw a doe gazing at us from behind a chokecherry bush. Then we saw her just-born fawn. This event was unusual here in the garden, which has a high fence to keep deer from getting in and feeding on the plants, so we reported it to the naturalists.

Signs reading "Danger—Do Not Pass" were hastily placed on all paths leading to the "nursery" in order to protect visitors. Here would be the perfect temptation for them to feed or handle the young fawn with its mother likely to reprimand them

severely. Like any mother, the doe is ready to protect her young from any enemy, human or otherwise. People in the garden were curious about the "danger" but none ventured down the paths.

When we returned from lunch we found that the little fawn had a new twin. Now it was really a newsworthy event. Naturalists, Field Schoolers, and their families and friends, fully equipped with cameras, were hopefully waiting their turn to photograph the three in spite of the cloudy sky and shaded location. The doe soon left, however, and the crowd dispersed after they had taken a multitude of pictures of the two fawns each lying quietly where its mother had left it. Only once did I see one move; it got up and on its wobbly legs managed to get over beside another tree.

After waiting quite some time, I set out to find the doe. It took considerable searching and when I found her only her eyes and ears were visible. She was standing at a distance in a thick clump of shrubs, keeping an eye



Doe with newborn twin fawns.

*Harwell*

on all that was going on and browsing now and then on nearby plants. She did not return to her fawns until the museum was closed and everyone had gone home. Consequently this occasion did not offer a typical situation in which to observe unnoticed the behavior of a doe with her newborn fawns.

The following morning she again left when visiting hours began and watched from a spot on the far side of the garden. One fawn spent much of the day in the little stream by the path, hidden from view by the deep grass. One of the naturalists decided this was not the place for it and lifted it out. It wandered off but the other fawn lay quietly all day beside a tree. That evening it was decided that the time had come to dismiss them. After all, it was necessary to protect the wildflowers too. About 5:30 one of the naturalists opened the gate, carried out the only fawn

he could find, and chased out the doe. The next morning she was back in. Again the naturalist opened the gate and chased out the mother, who ran across the parking lot. Her other fawn ran over to the far side of the garden so the naturalist put it over the fence. It promptly started off in the direction of the Government shops and the doe was later seen headed in this direction.

By this time the doe must have realized that the wildflower garden was not the place for her. She did not enter again through the small hole in the gate as she had before. With the exception of this hole, which no one had believed big enough to admit a deer about to give birth to twins, the high fence around seems to be deer-proof. The mule deer is known to be an excellent jumper on occasions, but to our knowledge they have never entered here in that manner.



## THE PRODIGAL'S PRAYER

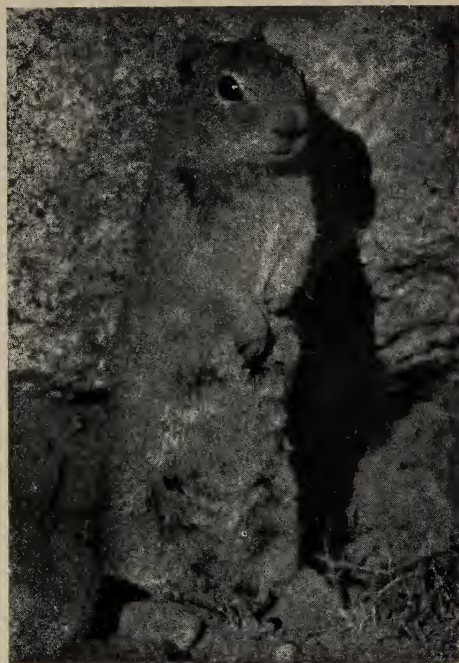
By Hugh Peyton, Superintendent

Coulee Dam National Recreation Area

Take me back, O Mountains,  
 Let your gods be mine again;  
 I've felt the fangs of doubt  
 In the muddled creeds of men.  
 I've seen their spires spring  
 From cities steeped in sin,  
 And trodden pulseless pavements,  
 And mingled with the din.  
 I've gazed on grand cathedrals  
 That man has built to God,  
 With aisles colored crimson  
 Where feet of War have trod.  
 I've felt mad oceans roll,  
 Watched them curl and foam;  
 Now I'm wander-weary—  
 O Mountains, take me home.

O, let your lone trails lure me  
 From the fevered call of men;  
 Blend me with your mysteries;  
 Make me one with you again.  
 Lead me through sylvan stillness  
 To my cabin by the stream;  
 Let me dream again at twilight  
 When the golden embers gleam.  
 Let your vastness be my temple,  
 And your ermine peaks the shrines,  
 All wrapped in wordless worship,  
 And plumed with frosted pines.  
 And let me ride your ranges' rim  
 Whose moonlit marvels rise,  
 Works of God there is no doubting,  
 Etched against the skies.

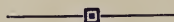
Let me hear your winds at twilight,  
 With their vesper voice sublime,  
 As they brush the chords of space  
 To the velvet dance of time.  
 Let the sunsets tip my shrines  
 With a glowing glaze of gold;  
 Robe my soul in silken silence,  
 Let me worship as of old.  
 Take me back, O Mountains,  
 Till my earthly trail is done,  
 Then shroud me in the shadows  
 Of the crimson setting sun.  
 Encoffin me in hush eternal,  
 Bury me deep in sylvan gloom;  
 Let a summit be my headstone,  
 Let a canyon be my tomb.



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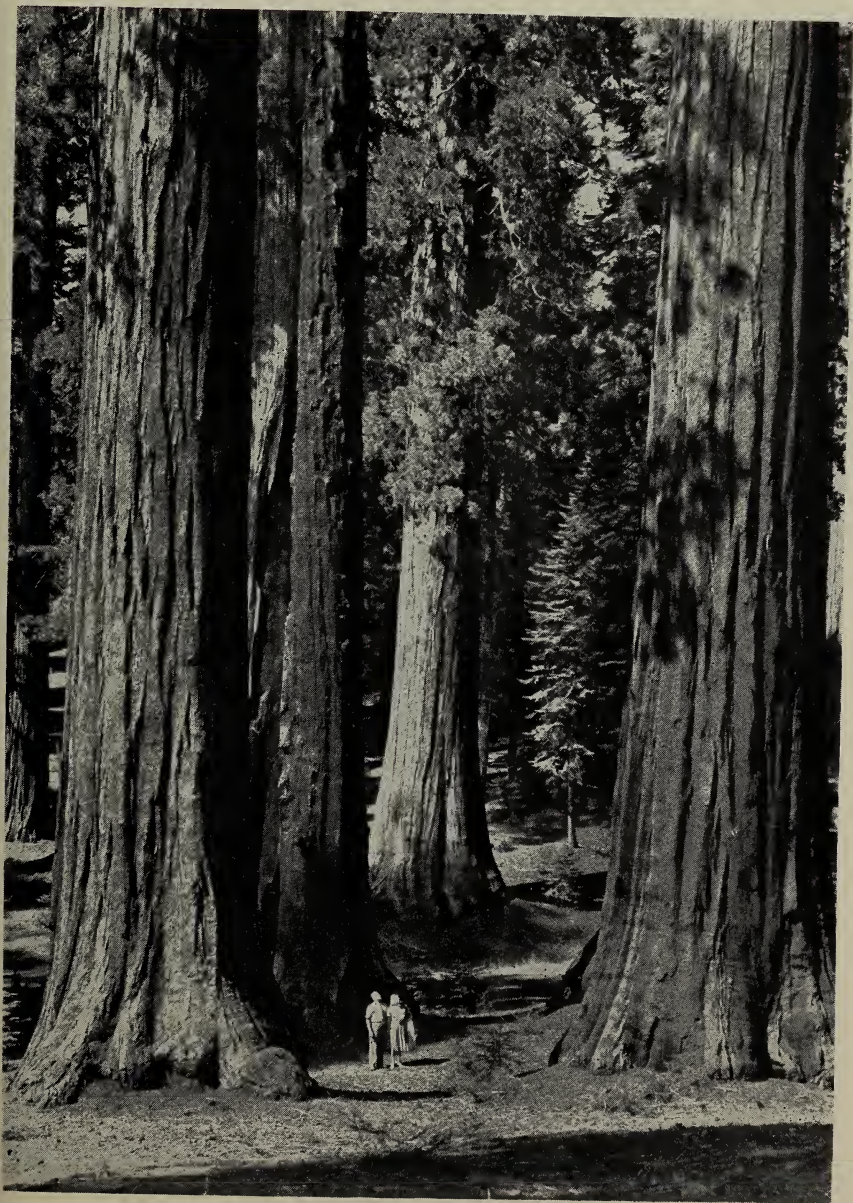
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*Governor's Group, Mariposa Grove of Giant Sequoias  
—Ralph Anderson*

